

OCEAN GALES AND STORMS, SEPTEMBER 1936

Vessel	Voyage		Position at time of lowest barometer		Gale began September	Time of lowest barometer September	Gale ended September	Lowest barometer	Direction of wind when gale began	Direction and force of wind at time of lowest barometer	Direction of wind when gale ended	Direction and highest force of wind	Shifts of wind near time of lowest barometer
	From—	To—	Latitude	Longitude									
NORTH ATLANTIC OCEAN													
Bergensfjord, Nor. S. S.	Bergen	New York	55 00 N.	35 30 W.	1	4p, 1	2	29.46	WSW	WNW, 7	NNW	NW, 9	W-NW.
Burgerdijk, Du. S. S.	Rotterdam	Habana	31 48 N.	54 13 W.	2	3p, 2	2	29.74	SE	S, 8	S	SE, 9	SSE-S.
Alberta, Ital. S. S.	Gibraltar	Boston	36 00 N.	56 11 W.	2	10p, 2	3	29.63	SSE	NE, 8	N	NNE, 9	ENE-NNE.
Ida Z. O., Ital. S. S.	do	do	43 07 N.	35 50 W.	5	10a, 5	5	29.70	SW	SW, 8	SW	SW, 9	SW-W.
Sunetta, Du. M. S.	Cristobal	Hull	48 03 N.	21 20 W.	5	6a, 6	7	29.21	SW	W, 8	WNW	W, 9	SW-W.
Tactician Br. S. S.	Liverpool	Kingston	47 24 N.	10 32 W.	6	1p, 6	7	29.55	SSW	SSW, 9	NW	SSW, 9	SSW-W.
Colombia, Du. M. S.	Dover	Ponta Delgada, Azores.	48 21 N.	6 21 W.	6	9p, 6	7	29.46	S	SSW, 10	WNW	SSW, 10	SSW-WSW.
West Kyska, Am. S. S.	Flushing	Tampa	52 06 N.	4 00 E.	7	8a, 7	8	29.07	W	W, 8	W	W, 11	
Eastern Prince, Br. M. S.	New York	Rio de Janeiro	19 05 N.	51 15 W.	9	3a, 10	10	29.91	NE	ESE, 7	ESE	NE, 8	NE-ESE.
Nemaha, Am. S. S.	Galveston	Tampico	26 00 N.	95 00 W.	12	3a, 13	13	29.77	E	SE, 7	ESE	SE, 8	ESE-SE.
Motocarline, Belg. M. S.	Antwerp	Aruba	22 33 N.	59 58 W.	13	2p, 13	14	29.58	SE	SSE, 9	SSW	SE, 10	SE-SSE.
Sheridan, Br. S. S.	Para	New York	28 42 N.	71 08 W.	13	6p, 16	17	29.38	NE	NW, 10	S	NNW, 10	N-NW-SSW.
American Merchant, Am. S. S.	New York	London	47 30 N.	33 42 W.	16	4a, 17	17	29.79	NE	ENE, 8	ENE	NE, 10	NE-ENE.
Allan Jackson, Am. S. S.	Boston	Baytown, Tex.	32 30 N.	74 36 W.	17	11a, 17	17	29.29	NNE	N, 10	WNW	N, 10	N-NW.
Seminole, Am. S. S.	New York	Galveston	34 42 N.	75 52 W.	17	2p, 17	17	29.55	ENE	NNE, 9	N	NNE, 10	ENE-NNE-N.
Yucatan, Am. S. S.	do	Habana	34 42 N.	75 40 W.	17	5p, 17	17	29.46	NE	N, 10	NW	N, 10	NE-N.
El Almirante, Am. S. S.	New Orleans	New York	34 24 N.	75 01 W.	17	7p, 17	18	29.10	NNE	N, 9	W	NE, 9	NE-N-W.
Whipple, Nic. M. S.	Norfolk	Cap Haitien	33 04 N.	76 28 W.	17	9p, 17	18	29.64	NE	NNW, 12	NW	NW, 12	NNW-NW.
Virginian, Am. S. S.	New York	Cristobal	35 35 N.	72 00 W.	17	11p, 17	18	28.59	NE	SE, 10	WSW	NE, 12	NE-SE.
Limon, Am. S. S.	Boston	Tela	35 12 N.	74 25 W.	17	1a, 18	18	28.49	ENE	E, 6	SW	NE, 11	E-Calm-NW.
El Occidente, Am. S. S.	New York	Galveston	36 10 N.	74 50 W.	17	5a, 18	18	28.60	NE	NE, 9	W	NE, 12	NE-NW-W.
El Lago, Am. S. S.	do	New Orleans	36 15 N.	76 06 W.	18	7a, 18	18	29.35	NNE	N, 12	NNW	N, 12	NE-NW.
Wm. Rockefeller, Am. S. S.	do	Aranas Pass.	37 15 N.	76 06 W.	16	10a, 18	19	29.23	NE	N, 12	NW	NNE, 12	NNE-N.
Cities Service Kansas, Am. S. S.	do	Port Arthur	36 50 N.	73 45 W.	17	2p, 18	18	28.84	ENE	SW, 12	W	SE, 12	SE-SW-WSW.
Gulfking, Am. S. S.	Providence	do	38 27 N.	72 30 W.	17	7p, 18	19	28.65	ENE	SE, 2	NNW	SE, 11	SE-W.
Monarch of Bermuda, Br. S. S.	Bermuda	New York	39 12 N.	71 50 W.	18	2a, 19	19	28.65	SE	SE, 12	N	SE, 12	SE-WSW-NW.
American Importer, Am. S. S.	Belfast	Boston	42 42 N.	68 12 W.	19	10a, 19	19	29.50	NE	NE, 9	NNW	NE, 10	
Maria, Ital. M. V.	Algiers	New York	36 19 N.	33 50 W.	19	10a, 19	20	29.85	NNW	NNW, 5	NNW	NNW, 9	S-SW.
Columbus, Ger. S. S.	Bremerhaven	do	40 36 N.	66 20 W.	19	11a, 19	19	29.33	S	SSW, 12	NW	SSW, 12	SSW-NW.
Shiedrecht, Du. M. S.	Hamburg	Philadelphia	42 20 N.	56 30 W.	19	4a, 20	20	29.32	S	WSW, 9	N	WSW, 10	WSW-NW.
Maasdam, Du. S. S.	Rotterdam	New York	46 08 N.	54 00 W.	20	7a, 20	20	29.45	ESE	NE, 9	NNE	NE, 10	E-NNE.
Colorado Springs, Am. S. S.	New Orleans	Liverpool	42 30 N.	50 23 W.	19	2p, 20	21	29.40	S	SW, 8	N	NW, 10	SSW-W.
Falsterbo, Swed. M. S.	Rotterdam	Cristobal	35 30 N.	31 45 W.	20	6p, 20	21	29.31	NW	N, 6	N	N, 9	NNW-NNE.
Binnendyk, Du. S. S.	do	Bridgeport	45 16 N.	48 26 W.	20	6p, 20	21	29.12	E	SSW, 3	N	NNW, 11	E-SSW.
Paris, Fr. S. S.	Southampton	New York	45 29 N.	42 55 W.	21	11a, 21	21	29.21	SSE	W, 4	NNW	NW, 12	SW-W-NW.
Gulfwing, Am. S. S.	Las Piedras	Philadelphia	27 12 N.	71 03 W.	20	8p, 21	22	29.54	NW	W, 10	NNW	NNW, 10	NW-W-NW.
Hedderheim, Ger. S. S.	Husum	Boston	52 12 N.	41 08 W.	21	Noon, 22	23	29.94	E	N, 9	NW	N, 10	
Saramacca, Am. S. S.	Boston	Baracoa	28 55 N.	69 45 W.	21	Noon, 22	25	28.94	ESE	SSW, 12	WNW	SSW, 12	SSE-SSW-W.
Jean Jadot, Belg. S. S.	Antwerp	New York	42 29 N.	63 36 W.	24	8p, 24	25	29.41	SE	SE, 10	SW	SE, 10	SE-SW.
Exchange, Am. S. S.	Lisbon	do	42 42 N.	46 00 W.	27	8a, 27	27	29.39	W	WNW, 10	NNW	NNW, 10	W-NW.
Duivendrecht, Du. M. S.	Houston	Rotterdam	46 14 N.	37 00 W.	29	Noon, 29	30	29.23	SSW	S, 7	WSW	WSW, 9	SSW-S-SW.
Memphis City, Am. S. S.	Swansea	Montreal	53 20 N.	47 00 W.	29	4p, 29	*1	23.63	N	N, 9	NW	NW, 11	NE-NW.
Leto, Du. S. S.	Montreal	London	53 09 N.	20 28 W.	29	8p, 30	30	29.55	SE	SSE, 9	SSW	SSE, 9	SSE-SSW.
NORTH PACIFIC OCEAN													
Pres. Grant, Am. S. S.	Yokohama	Victoria, B. C.	49 00 N.	130 05 W.	*31	Noon, 1	1	29.75	NW	Calm	NNW	NW, 9	NNW-SW-SSE.
Silverwillow, Br. M. S.	Dahikan	Los Angeles	20 30 N.	131 45 E.	1	4p, 1	2	29.35	N	SW, 6	SE	SSE, 8	S W - S S W -
Pres. McKinley, Am. S. S.	Victoria, B. C.	Yokohama	52 06 N.	155 12 W.	1	2p, 2	2	29.99	WSW	SW, 6	SW	SW, 9	NNW.
Texas, Am. S. S.	Siain, P. I.	San Francisco	24 21 N.	157 25 W.	5	6p, 6	6	30.43	NE	NE, 7	ENE	NE, 8	NE-ENE.
Kwanto Maru, Jap. M. S.	Los Angeles	Yokohama	44 27 N.	167 09 E.	6	10p, 6	6	29.57	SE	WSW, 2	SSE	ESE, 8	S-NW.
Pres. McKinley, Am. S. S.	Victoria, B. C.	do	48 18 N.	166 30 E.	7	8a, 7	7	29.57	E	E, 7	E	E, 8	E-N.
Lossiebank, Br. M. S.	San Francisco	Manila	22 50 N.	165 46 E.	7	6a, 8	8	29.72	S	SW, 8	WSW	S, 9	S-WSW.
Mauna Kea, Am. S. S.	Los Angeles	Balboa	20 06 N.	106 42 W.	8	1p, 8	8	29.65	E	SE, 9	SSE	SE, 9	E-SE.
Texan, Am. S. S.	do	do	21 20 N.	108 40 W.	8	3a, 9	9	29.25	E	SE, 12	S	SE, 12	E-SE.
Greylock, Am. S. S.	do	do	22 22 N.	109 25 W.	9	7a, 9	9	29.28	E	NNW, 11	W	NNW, 11	E-N-W.
Mana, Am. S. S.	Hilo	San Francisco	37 00 N.	125 12 W.	8	4a, 10	10	29.84	N	NW, 8	NW	NW, 8	None.
General Lee, Am. S. S.	Yokohama	do	45 08 N.	164 50 E.	10	2a, 11	11	29.55	NW	N, 5	N	NW, 8	
Norfolk Maru, Jap. S. S.	do	Los Angeles	34 18 N.	120 18 W.	10	4p, 11	10	29.72	N	WNW, 3	NNW	N, 8	
Texan, Am. S. S.	Los Angeles	Balboa	15 28 N.	99 42 W.	11	5p, 11	11	29.73	SSW	SSW, 6	WSW	WSW, 8	SSW-WSW.
Nankai Maru, Jap. M. S.	Yokohama	Los Angeles	44 48 N.	169 00 E.	14	11p, 14	14	29.58	W	W, 7	W	W, 8	NW-W.
Pres. Grant, Am. S. S.	Victoria, B. C.	Yokohama	51 25 N.	172 10 W.	17	6p, 17	19	29.49	SW	W, 7	NW	SW, 8	SW-W.
Washington, Am. S. S.	Yokohama	Los Angeles	45 12 N.	152 12 W.	21	2a, 22	22	29.67	SSE	SW, 7	WSW	SW, 8	SSE-SW.
Golden Tide, Am. S. S.	Catabangan, P. I.	San Francisco	41 55 N.	178 00 W.	23	1p, 23	24	29.16	WNW	WNW, 12	N	NW, 12	W-NW.
Pres. Jackson, Am. S. S.	Yokohama	Seattle	49 32 N.	175 26 W.	24	4p, 24	25	29.75	N	NW, 9	W	NW, 9	NNW-NW.
Nebraskan, Am. S. S.	Los Angeles	Balboa	20 26 N.	107 02 W.	25	6p, 25	26	29.64	SE	SE, 6	SW	SW, 8	ESE-SSE.
Hiye Maru, Jap. M. S.	Yokohama	Vancouver	49 34 N.	176 48 W.	27	Noon, 27	27	28.77	NNW	WNW, 8	NW	NW, 9	NNW-WSW.
Hokuroku Maru, Jap. M. S.	do	Los Angeles	45 25 N.	179 59 W.	30	4a, 30	30	29.39	WNW	NW, 1	W	NNW, 8	NW-WNW.

* Barometer uncorrected.

* Position approximate.

* October.

* August.

NORTH PACIFIC OCEAN, SEPTEMBER 1936

By WILLIS E. HURD

Atmospheric pressure.—During most of the first 9 days of September strong anticyclonic conditions overlay the Aleutian region. Thereafter there was a reaction to low pressure, and the average barometer for the month at both St. Paul and Dutch Harbor, 29.77 inches, was only slightly above the normal for the month. The Aleutian

low was well established as a whole over much of the northern part of the ocean, especially to the westward and southwestward of the Alaska Peninsula. Pressures above normal continued along the coast from Alaska to Washington, as shown by table 1, but were below normal from San Francisco southward.

High pressures extended from British Columbia and the northwestern United States southwestward to beyond Midway Island. Anticyclonic conditions were spreading

over northern Japanese waters from Mongolia during the month, but low pressures continued over the region of the lesser Japanese islands and the Philippines.

TABLE 1.—Averages, departures, and extremes of atmospheric pressure at sea level, North Pacific Ocean, September 1936, at selected stations

Stations	Average pressure	Departure from normal	Highest	Date	Lowest	Date
	Inches	Inch	Inches		Inches	
Point Barrow.....	29.98	+0.08	30.46	11	29.58	1
Dutch Harbor.....	29.77	+0.01	30.56	7	29.10	19
St. Paul.....	29.77	+0.06	30.48	8	29.00	18
Kodiak.....	29.87	+0.16	30.38	27	29.14	20
Juneau.....	29.98	+0.06	30.40	25	29.46	19
Tatoosh Island.....	30.08	+0.08	30.47	15	29.64	13
San Francisco.....	29.88	—0.06	30.09	14	29.63	3
Mazatlan.....	29.80	—0.02	29.88	15	29.64	26
Honolulu.....	29.97	—0.03	30.04	1	29.83	6
Midway.....	30.03	+0.02	30.18	17	29.92	22
Guam.....	29.80	—0.03	29.90	1	29.68	10
Manila.....	29.75	—0.02	29.84	7, 15	29.68	26
Hong Kong.....						
Naha.....	29.77	+0.01	29.94	20	29.24	30
Chichishima.....	29.85	—0.01	30.04	2	29.62	1, 22
Urakawa.....	30.00		30.26	19	29.70	25

NOTE.—Data based on 1 daily observation only, except those for Juneau, Tatoosh Island, San Francisco, and Honolulu, which are based on 2 observations. Departures are computed from best available normals related to time of observation.

Extratropical cyclones and gales.—Following the generally quiet weather of July and August in northern Pacific waters, some increase in storminess was experienced in September, especially over that part of the ocean to the northward of the fortieth parallel between meridians 150° W. and 160° E. The weather, however, was not severe, except locally on the 23d, when the American steamer *Golden Tide* encountered winds of hurricane force, barometer 29.16, near 42° N., 178° W. In all other instances reported the wind did not exceed force 9.

Of the four most important cyclones in higher latitudes the first lay central over northern Japan and the Kuril Islands on September 6. It expanded with eastward movement and covered a great part of the northwestern ocean on several days. It crossed the Aleutians as a moderately deep disturbance during the 13th to 16th, then moved northward into Alaska. Resulting gales were reported on several days in scattered localities, principally in east longitudes, from the 6th to 14th.

The second cyclone was centered over the Bering Sea on the 17th to 19th, lowest pressure at St. Paul, 29 inches, on the 18th. This caused fresh gales on all 3 days immediately south of the Aleutians.

From the 22d to 24th the cyclone that caused the gale of force 12 experienced on the 23d by the *Golden Tide*, and of less force by other ships on the 24th, crossed the northern routes south of the Aleutians, then moved rapidly toward the Arctic Ocean.

This cyclone was succeeded by the deepest storm of the month in Aleutian waters. Scattered gales of force 8–9 accompanied it in northern midocean from the 26th to 30th. On the 27th the Japanese motorship *Hiye Maru* reported a barometer of 28.77, near 49½° N., 177° W., and on the 30th the lowest pressure of the month, 28.67 inches, was read on the motorship *San Diego* near 50° N., 172° W.

From the 8th to 10th of September, while an elongated region of low pressure extended along the American coast between approximately 20° and 40° N., fresh north to northwest gales occurred on the 9th and 10th near and to the northward of Point Conception. In the southern part of this low a tropical disturbance had a brief period of existence.

Disturbances off the west coast of Mexico.—Three disturbances occurred off the Mexican west coast during the month.

The first was the cyclone, which has been referred to as developing over the southern area of an elongated depression extending far northward. It first appeared to observation on the 8th in the vicinity of Cape Corrientes. At 8 a. m. (local time) the American steamer *Deroche*, southbound, had an east wind of force 6 in 20°25' N., 107°57' W. At local noon, with falling barometer, in 20°02' N., 107°32' W., the wind had risen to force 7. Five hours later, in 19°36' N., 107°06' W., the ship was in a southeast gale of force 9–10, uncorrected barometer 29.51.

As the storm moved northward into the Gulf of California its violence increased. From 6 to 8 a. m. of the 9th the American steamer *Greylock* reported a minimum pressure reading of 29.28, in 22°22' N., 109°25' W., accompanied by north-northwesterly gales of force 10–11, during the continuance of which the ship hove to. At 2:30 a. m. of this date the American steamer *Texan*, in 21°20' N., 108°40' W., recorded a pressure of 29.25 inches, with hurricane winds from east to southeast which continued during the early morning hours.

After crossing Cape San Lucas, the storm apparently diminished rapidly in intensity, and on the 10th was completely dissipated.

On September 11, as the *Texan* voyaged toward the Canal, she ran into disturbed weather south of Acapulco during which she experienced a west-southwest gale of force 8 at 8 p. m. It appears that, as a depression was then making up in the Bay of Campeche, the gale on the Pacific side was associated with this Gulf of Mexico disturbance.

During the 24–26th unsettled weather was again experienced, the disturbed region extending approximately from Manzanillo across the lower part of the Gulf of California, with little progressive movement. The Olson Line steamer *San Pedro*, according to a special report to the Hydrographic Office at San Francisco, prepared by Capt. William E. Hutton, entered the disturbed locality late on the 24th, in 22°25' N., 109°45' W., several hours after receiving a radio report from Mazatlan forecasting bad weather off Cape Corrientes. During the day an unnamed vessel off Manzanillo reported a southeast wind, force 7. On the morning of the 25th the *San Pedro*, in 21°14' N., 108°16' W., had a rapidly falling barometer and “winds of cyclonic force.” Heavy winds from east to southeast and rain squalls continued through most of the 5th, with lowest barometer on ship, 29.60, at 3 p. m., in 20°34' N., 107°20' W. It was not until 2:30 a. m. of the 26th, when the *San Pedro* was near Cape Corrientes, that the wind shifted to south and south-southwest in a gale and the storm began to diminish. The highest wind reported in connection with this cyclonic disturbance was of force 8, southwest, near midnight of the 25th, observed on the American S. S. *Nebraskan*, at about 20½° N., 107° W.

Typhoons.—Subjoined is an account, by the Reverend Bernard F. Doucette, S. J., Manila Observatory, of the tropical disturbances which occurred in the waters of the Far East during September.

Fog.—Fog was observed on several days along practically the entire course of the northern steamer routes, but was most widely reported on the 7th to 12th along the middle part of the routes, or between 40° and 50° N., 165° E. and 150° W. The most southerly occurrence reported this month was on the 7th near 19° N., 131° W. Fog was noted on 4 days in waters bordering on Washington and Vancouver Island, and on 6 days off the California coast.